

Date: Wed, 3 Aug 94 04:30:22 PDT
From: Ham-Homebrew Mailing List and Newsgroup <ham-homebrew@ucsd.edu>
Errors-To: Ham-Homebrew-Errors@UCSD.Edu
Reply-To: Ham-Homebrew@UCSD.Edu
Precedence: Bulk
Subject: Ham-Homebrew Digest V94 #221
To: Ham-Homebrew

Ham-Homebrew Digest Wed, 3 Aug 94 Volume 94 : Issue 221

Today's Topics:

Plastic vs. Metal Transistors (2 msgs)
Source for Crystals

Send Replies or notes for publication to: <Ham-Homebrew@UCSD.Edu>
Send subscription requests to: <Ham-Homebrew-REQUEST@UCSD.Edu>
Problems you can't solve otherwise to brian@ucsd.edu.

Archives of past issues of the Ham-Homebrew Digest are available
(by FTP only) from UCSD.Edu in directory "mailarchives/ham-homebrew".

We trust that readers are intelligent enough to realize that all text
herein consists of personal comments and does not represent the official
policies or positions of any party. Your mileage may vary. So there.

Date: 3 Aug 1994 10:13:51 +1200
From: comp.vuw.ac.nz!frc.maf.govt.nz!not-for-mail@uunet.uu.net
Subject: Plastic vs. Metal Transistors
To: ham-homebrew@ucsd.edu

Moulded plastic or metal can? As with most things in life, it
depends...

Plastic and metal mostly use identical dies/bonding wires. This means
that peak current capability and voltage breakdown levels are usually
the same (check the data sheets!) or only slightly lower.

Thus for low duty cycle use, plastic can often be used in place of the
metal packaged version, resulting in a reduction of board size (T0-220
instead of T0-3), as well as weight (portable gear).

In really low duty applications, you may be able to use T0-220-
Isolated, which does away with things like mica isolating washers and
heat conducting paste.

Needless to say, moulded plastic transistors are cheaper, important if

you are designing for large volume production, or if you are on a tight budget :-)

Does anyone know if nasties like BeO are used in plastic 'exploding' packs? If so, a good reason to use metal for prototyping.

Hope this helps.

Cheers,

Wilbert (ZL2BSJ)

--

Wilbert Knol, Acoustics Group, MAF Marine Research, Wellington, New Zealand.
Usenet: wk@frc.maf.govt.nz PACKET:ZL2BSJ@ZL2WA.NZL.OC
AMPR:[44.147.180.88] AX25 NET/ROM TCP/IP MBX 146.625 147.075 MHz 24 hrs.

Date: 2 Aug 1994 19:08:30 GMT
From: dog.ee.lbl.gov!news.cs.utah.edu!utah-morgan!cs.utexas.edu!convex!
news.duke.edu!eff!news.kei.com!yeshua.marcam.com!charnel.ecst.csuchico.edu!nic-
nac.CSU.net!usc!howland.@ihnp4.ucsd.edu
Subject: Plastic vs. Metal Transistors
To: ham-homebrew@ucsd.edu

In article <31m0gg\$6m2@tekadm1.cse.tek.com>, royle@tek4.cse.tek.com (Roy W Lewallen) writes:

|> mjsilva@ted.win.net (Michael Silva):
|>
|> :Can someone explain the differences I should expect to find between
|> : "identical" transistors in plastic and metal? My specific case
|> : involves some PN5179s I have. Is there any case where these might not
|> : work in a circuit designed for a 2N5179? Aside from having less heat
|> : dissipating ability, are the plastics in any way inferior?
|>

My recollection is that the 2N5179 is a four terminal transistor, with the forth lead connected to the case. It is a UHF transistor, with fte of 1.8GHz or so, and it may be of help in some circuits to be able to ground the metal case. I'm surprised that a plastic '5179 is available.

-- Ralph Stirling Project Engineer

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Date: 02 Aug 1994 21:36:34 GMT
From: ihnp4.ucsd.edu!agate!spool.mu.edu!bloom-beacon.mit.edu!senator-
bedfellow.mit.edu!news.mit.edu!monta@network.ucsd.edu
Subject: Source for Crystals
To: ham-homebrew@ucsd.edu

gdian22@rfc.comm.harris.com (Gary M Diana) writes:

> [needs 455 kHz BFO crystal]

Yes, this is getting a bit low for fundamental AT-cut crystals, but
manufacturers can certainly supply crystal resonators at 455 kHz:
check with ICM or Piezo. Some cuts have useful modes at sub-kHz.

You might also consider a ceramic resonator; I think Digi-Key carries
these (from muRata or Toko). The technology is the same as the
ceramic filters you mention. Lower Q, thus higher phase noise. Also,
you can divide down from a crystal source at, say, 4.55 MHz. (Diode
mixers like the nice square waveform, but this is nothing to get
excited about for a BFO application.) Finally, if you want to
cobble up something quick, don't overlook a simple LC oscillator,
which can be quite stable.

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MIT Advanced Television Research Program

End of Ham-Homebrew Digest V94 #221
